

licensees place in their public files. As CTW has urged for more than two years, such a requirement will require licensees to devote attention to educational goals and how to achieve them, thus helping to assure the bona fides of their children's educational programming efforts.

**C. Hours of Broadcast.**

The Commission's proposal to require that qualifying "core" programming be aired between 6 am and 11 pm should be changed; the qualifying time period should begin no earlier than 7 am and end at 10 pm. According to Nielsen Media Research, on average only 2.4% of all children 2-11 nationwide were watching television Monday through Friday between 6 and 6:30 am during a recent four-week period, whereas the figure rose to 7.0% -- nearly three times as much -- for the 7 to 7:30 am time period. See Attachment 5, August 1995 PUT LEVELS CHILDREN 2-11.

At the other end of the broadcast day, although many children and young teens may remain in the viewing audience up to 10 pm, it appears questionable for the Commission to credit "core" children's programming (intended for children 16 and under) airing after the current 10 pm start of the safe harbor

for "indecent" programming which is intended to protect children 17 and under.<sup>17/</sup>

**D. Regularly Scheduled.**

CTW agrees that qualifying "core" programming should be regularly scheduled, particularly since the Commission's proposed regulatory regime places great importance on improving the flow of information to parents through published program guides and other means. However, educational specials are also meritorious, and if scheduled so as to permit their inclusion in program guides, should also receive credit.

**E. Standard Length.**

CTW also agrees that qualifying "core" programming should be at least 15 minutes in length, in part because shorter program segments cannot be included in printed program guides. CTW agrees with many broadcasters, however, that short-format

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<sup>17/</sup> See Action for Children's Television v. F.C.C., 58 F.3d 654, 664, 669-70 (D.C. Cir. 1995).

Ideally, qualifying educational programming targeted to preschoolers and children age 6 to 11 should be limited to the hours of 7 am to 8 pm.

programming is effective in promoting certain types of learning, and should receive some credit.

**F. Educational Identification.**

As discussed above, program guide identification of "core" programming should be required, since it will foster the ability of parents and others to utilize television to educate the children under their care. However, on-air identifications, including icons, are to be avoided, because they may tend to "turn off" child viewers and stigmatize the programs to which they are attached.

In sum, save only for (i) establishing a rebuttable presumption that the use of educational advisors satisfies the "specifically designed" component of the definition, and (ii) requiring that qualifying programming be aired between 7 am and 10 pm, the Commission should adopt its proposed six-part definition of "core" programming, i.e., programming specifically designed to serve the educational and informational needs of children. This definition eliminates the uncertainty surrounding the present definition, so that broadcasters will now know what

programming qualifies to satisfy the Act, but avoids FCC content judgments which could cause First Amendment problems.

To provide guidance regarding how much qualified programming must be aired, and to foster the significant increase in such programming that Congress expected the Act to engender, the FCC should provide the additional guidance described below.

**IV. TO INCREASE "CORE" EDUCATIONAL PROGRAMMING,  
THE FCC SHOULD AT LEAST ADOPT A SAFE HARBOR  
PROCESSING GUIDELINE, BUT SHOULD REJECT  
"PROGRAM SPONSORSHIP."**

**A. The Market's Failure To Meet Children's  
Educational Programming Needs Is Not Attributable  
To Any Inherent Inability Of Quality Children's  
Educational Television To Attract Audiences.**

CTW agrees that the Act's goal of increasing the amount of "core" educational informational programming on commercial television is not being met by the marketplace, requiring FCC intervention. CTW strongly disagrees, however, that this market failure equates to a "death spiral" for quality children's television, nor does it mean that such programming cannot attract audiences and be profitable.

As shown above, well-made programming specifically designed to serve the educational and informational needs of

children can and does attract significant audiences, primarily but not exclusively on public television. CTW's *Sesame Street*, *Cro*, and *Ghostwriter* have all performed well, while Fox's *Carmen Sandiego* and ABC's *Weekend Specials* have also achieved good ratings (see **Attachment 4**).

Yet, commercial broadcasters have long demonstrated a persistent bias that educational children's television will not be watched, and therefore have crowded their children's schedules with pure entertainment action/adventure cartoons, much like maintaining a home bookshelf containing nothing but comic books. When the Commission weakened broadcasters' children's television obligations in 1984 and continued to reflect lessened concern about children's programming for the rest of that decade, broadcasters' bias was given free reign, and educational programming decreased.<sup>18/</sup> Following passage of the Act, broadcasters continued to assume that the mandated children's educational programming would not be watched, and in many cases assured such a result by scheduling it at times when few children were in the audience.

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<sup>18/</sup> See Testimony of Squire D. Rushnell at 1-4 (June 28, 1994).

Accordingly, CTW agrees with the Commission that its intervention is required to fulfill the purposes of the Act. In this connection, the adoption of the proposed new definition of children's "core" programming, emphasizing steps that will help parents and other care-givers become better informed of what educational programming is available, should help involve the public in creating a favorable climate for children's educational television, while avoiding FCC involvement in making content judgments.

However, as noted above, more is needed to give broadcasters clear guidance as to their programming obligation, and to increase the amount of "core" programming that is aired.

**B.    The Commission Should, At Minimum, Adopt A Safe Harbor Processing Guideline.**

In CTW's view, the FCC should reject the proposed option of monitoring whether adoption of the proposed new definition of "core" programming will alone produce a significant increase in the amount of such programming. The new definition should enable broadcasters to more readily determine whether a particular program qualifies as "core" programming, but it is not directed toward, and will not result in, increasing the quantity of such programming.

Yet that result -- an increase in educational programming on commercial stations -- is exactly what Congress expected the FCC to achieve. As demonstrated above, Congress enacted the Children's Television Act "because of the FCC's reluctance to act to enhance children's television,"<sup>19/</sup> that is, because the Commission's reliance on broadcasters' voluntary compliance with their general obligation to serve children's programming needs was unsatisfactory to Congress. This is no time to repeat history: the monitoring option, relying as it does on voluntary compliance with a quantitatively unspecified programming obligation, is not significantly different than the FCC's market-based approach of the 1980s.<sup>20/</sup>

Both the other proposed options, a safe harbor processing guideline (which a licensee could opt to follow or not) and a mandatory programming standard, are permitted by the legislative history,<sup>21/</sup> and both will clearly increase the actual amount of "core" programming that is aired. Although a processing guideline allows broadcasters more discretion than a

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<sup>19/</sup> Senate Report at 5.

<sup>20/</sup> See id. at 3-4.

<sup>21/</sup> Notice, 10 FCC Rcd at 6336.

mandatory programming standard, the latter will more assuredly achieve the desired result, because of the stronger sanctions attached to failure to meet the standard. Therefore, if legally feasible, a mandatory standard should be adopted. In either case, the amount in question should be three hours per week, increasing by 1/2 hour per year to seven hours per week.

If either a processing guideline or a programming standard is adopted, compliance should be measured in terms of total weekly rather than daily program hours, in order to accord licensees greater scheduling flexibility and to recognize the limited weekday hours that network affiliates may have available in which to schedule children's programming.

On the other hand, the requirement should generally not be able to be met by averaging the amount of educational programming aired over a time period that is longer than one week, for to do so would almost surely eviscerate the requirement that qualifying "core" programming be regularly scheduled.<sup>22/</sup>

As we have said above, CTW believes that without a clear mandatory quantitative standard or at least a safe harbor

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<sup>22/</sup> However, CTW believes that broadcasters should be permitted to count reruns, and that some allowance must be made to credit both specials and short-segment programming.



processing guideline, broadcasters will not meaningfully serve the educational needs of children over the long term. Therefore, if the Commission adopts its proposal to "sunset" any processing guideline or programming standard that it adopts, it should adopt a rule requiring it to first analyze the record just prior to the sunset date, to determine if continued regulation is warranted.

**C.    The "Program Sponsorship" Proposal Should Be Rejected.**

As stated above, CTW strongly opposes the FCC's "program sponsorship" proposal under which, if either a processing guideline or a quantitative programming standard is adopted, each licensee would be required to broadcast at least one hour per week of "core" programming, but could pay another licensee (the "host" station) to broadcast the remaining hours of the "sponsor" station's "core" programming guideline or requirement over the facilities of the host station.

In CTW's view, licensees should not be able to buy their way out of a requirement imposed by Congress, even partially as the FCC proposes. The Act states that "as part of their obligation to serve the public interest, television station operators and licensees should provide programming that serves

the special needs of children,"<sup>23/</sup> while the accompanying Senate Report points out that "it is difficult to think of an interest more substantial than the promotion of the welfare of children who watch so much television and who rely upon it for much of the information they receive."<sup>24/</sup> It is the public interest basis of the "core" programming requirement that distinguishes it from other regulatory schemes where a "tradeability" concept might appropriately be utilized, such as to permit the sale of pollution credits. If broadcasters have a public interest obligation to serve the needs of children, our "most valuable resource,"<sup>25/</sup> then they should not be permitted to pay others to fulfill that obligation, any more than they can pay other broadcasters to fulfill their statutory equal opportunities or candidate access requirements.

A second difficulty with the "program sponsorship" proposal is that it will not directly support nationally-distributed children's television programming such as network or syndicated programming, which generally has the greatest

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<sup>23/</sup> Children's Television Act of 1990, Pub. L. No. 101-437, § 101(2), 104 Stat. 996.

<sup>24/</sup> Senate Report at 17.

<sup>25/</sup> Id. at 5.

potential for drawing child audiences. Instead, the sponsor station dollars will flow only to other local television stations, to be used either for local program production or perhaps to acquire national product, but on a short-term rather than long-term basis.

Finally, as the FCC notes (Notice, 10 FCC Rcd at 6347), the least popular local channel would become a children's television home -- or perhaps a ghetto, particularly since the host station should not be able to claim credit toward its own programming requirement for the sponsored programming, and would have to independently fulfill that requirement over its own facilities (id. at 6348). In addition, the "ghetto" stigma is likely to attach to host stations because the wealthiest local stations will become sponsor stations, thereby avoiding carrying more than one hour of "core" programming per week.

At a minimum, if the "program sponsorship" proposal is adopted, the "host station" should not be permitted to be a public television station. Congress found insufficient educational programming on commercial stations, not on noncommercial outlets.<sup>26/</sup> Moreover, unless "core" programming

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<sup>26/</sup> Senate Report at 7.

is available on all mass media and not just on public television, the public perception of its importance is diminished.

In addition, should any variant of "program sponsorship" be enacted, the FCC should ensure that the total number of hours of educational programming aired in each television market equals the number of stations in the market, multiplied by the number of educational hours required to be broadcast. In other words, host stations should not be able to claim credit for sponsored programming they air, nor should two stations be able to jointly sponsor the same program hour on a host station.

### **CONCLUSION**

The Notice represents a commendable start toward making a real difference in the children's television landscape. In light of several decades' evidence that voluntary implementation of broadcasters' longstanding obligation to use television to serve children's educational needs simply has not resulted in any significant increase in children's educational television programming, the Commission should adopt, with CTW's suggested modifications, its proposed clear definition of "core"

programming, as well as a processing guideline or programming standard of at least three hours per week of such programming. The Commission should reject, however, the "program sponsorship" concept: it denigrates the importance of broadcasters' obligation to serve children.

Respectfully submitted,

CHILDREN'S TELEVISION WORKSHOP

Of Counsel:  
Daniel Victor, Esq.  
Children's Television  
Workshop  
One Lincoln Plaza  
New York, NY 10023  
(212) 875-6301

By: Gary E. Knell ~~pkc~~  
Gary E. Knell  
Senior Vice President for  
Corporate Affairs

By: Barbara K. Gardner  
Barbara K. Gardner

Leventhal, Senter & Lerman  
2000 K Street, N.W.  
Suite 600  
Washington, D.C. 20006  
(202) 429-8970

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Effects of educational TV viewing of lower income preschoolers  
on academic skills, school readiness, and school adjustment  
one to three years later.

*A Report to Children's Television Workshop*

John C. Wright and Aletha C. Huston  
Center for Research on the Influences of Television on Children (CRITC)  
University of Kansas  
Lawrence, KS 66045

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Effects of educational TV viewing of lower income preschoolers  
on academic skills, school readiness, and school adjustment  
one to three years later.

*Executive Summary*

Background and Purpose of Study

- This report summarizes the key initial results from a four-year longitudinal study of low-income children's media use and its relationship to the subsequent development of their academic skills, school readiness, and school adjustment.

Method

- More than 250 families with a preschool child participated in the study. Children were 2 or 4 years old at the beginning of the study. 5 or 7 at the end. All families lived in low-income census tracts, and 46% had received means-tested assistance in the past 3 years. About 40% were African American, 40% European American, and 20 % Hispanic.
- Families were evaluated four times, each a year apart, in an office visit lasting about two hours, during which the parent was interviewed, and the child was tested on a variety of achievement tests and assessment situations.
- A two-hour visit was made to the home of each family on four occasions, also a year apart, to assess supports for social, emotional, cognitive and educational development.
- During the year separating each of these home and office assessments, periodic telephone interviews were conducted with the parents, yielding a detailed record accounting for how the child spent every minute of the preceding day.
- In analyses of the relationship between television viewing and subsequent academic outcomes, statistical controls were applied for parent education, family income, preschool attendance, the child's first language, the supportiveness of the home environment, and the child's initial level of language skills at the outset of the study.

Key Findings

- The children's viewing of educational children's programming accounted for just under two hours per week at ages two to four, and declined to about one hour per week by age six to seven. Almost 80 % of that viewing up to age five was accounted for by Sesame Street.
- Non-educational cartoon viewing occupied 7-8 hours per week of these children's lives up to the time when they started kindergarten, then it declined.



- Viewing of adult (general audience) programs was about 16 hours per week at age 2 (mostly because they were with parents who were watching). This viewing declined to 8 hours by age 5 or 6, then started to rise slowly at age 7, to about 9 hours per week.
- Viewing of children's educational programs was **negatively** related to viewing of non-educational cartoons and adult entertainment programming. The relationship was small, but consistent.
- Up to age five, there was a strong **positive** relationship of viewing educational children's programs in general, and Sesame Street in particular, to time spent reading or being read to and time spent in educational activities. It was still positive, but less so, at 6 and 7.
- Viewing of non-educational cartoons and of adult entertainment programs was consistently **negatively** related to time spent reading, and also negatively, but less strongly, to time spent in educational activities.
- For the younger children only, prior viewing of children's educational programs in general, and Sesame Street in particular, were consistent **positive** predictors of letter-word knowledge, math skills, vocabulary size, and school readiness on age-appropriate standardized achievement tests, even when statistical controls for children's background and initial levels of language skills were applied. About 25 minutes per day of viewing added a third of a standard deviation in test scores (about 5 points on a test with a range of scores from 70 to 130 points).
- With the same controls in place, non-educational cartoon viewing and adult program viewing had consistently **negative**, but somewhat weaker effects on the same outcomes.
- For six- and seven-year-olds, prior viewing of children's educational programs in general, and Sesame Street in particular, was a **positive** predictor of reading skill (paragraph comprehension) and also a positive predictor of teachers' judgments of overall school adjustment in first or second grade.

### *Conclusion*

*Young disadvantaged children's viewing of Sesame Street and other educational children's programs appears to play a **positive** causal role in their development of readiness for school. That contribution occurs between two and five years of age, and is independent of the contributions of parents' education, quality of the home environment, and family income, all of which also make contributions to the same **positive** outcomes. By contrast, the viewing of non-educational cartoons and adult programming has **negative** effects on readiness for school. Among four- to seven-year-olds educational TV viewing **favorably** affects reading and school adjustment.*

# Effects of educational TV viewing of lower income preschoolers on academic skills, school readiness, and school adjustment one to three years later.

## INTRODUCTION

In 1988, using funds from an unrestricted grant they had received from the John D. and Catherine T. MacArthur Foundation, Children's Television Workshop contracted with the Center for Research on the Influences of Television on Children (CRITC) at the University of Kansas to conduct a four-year longitudinal study of low-income children's time and media use in relation to cognitive and educational outcomes. We sought to examine many influences on those outcomes, from family demographics and home environment to television viewing, print media use, and video game playing. This report is the first to be released to the public from that study.

## History and Background

During the first two seasons of Sesame Street summative evaluations were carried out at several testing sites around the country by the Educational Testing Service (Ball & Bogatz, 1970; Bogatz & Ball, 1971). The large samples were composed primarily of low-income children. These studies were designed as field experiments in which children were randomly assigned to view or not to view the program. The method of assignment was called "encouragement to view." In the experimental group the researchers told mothers about the program; encouraged them to have their children watch it; provided them with posters and print materials; and visited them every few weeks. In its first year, the program had such unexpected success that the control group also watched without the encouragement of the investigators -- a victory for the producers, but a problem for the researchers. In the second year, the study was conducted in sites where UHF or cable was required in order to receive Sesame Street. The experimental group was given the appropriate equipment; the control group was not.

The results of these studies were positive. Children who watched Sesame Street improved more than non-viewers on tests of the basic academic and cognitive skills the program sought to teach. Comparison of the experimental and control groups demonstrated that the difference was the result of the experimental treatment rather than other factors. A few years later, however, Cook and his associates (1975) reanalyzed the ETS data. They argued that at least part of the effect of the experimental treatment was due to the effects of the "encouragement" on the mothers in the study rather than to the direct effects of viewing on their children. Within the control group significant differences between viewers and non-viewers occurred only on tests of letters and numbers (i.e., on two of the nine subtests). They went on to argue that these gains resulted from a form of

learning that was largely by rote, and that would be unlikely to promote more general school readiness.

A large body of research demonstrating the effectiveness of Sesame Street for teaching various skills had accumulated by the 20th anniversary of the program in 1989. Most of the work consisted of short-term studies of particular aspects of the curriculum.

In the early 1980's the present investigators carried out a longitudinal investigation of the television viewing patterns of children from ages 3 to 7. In that study, children who were heavy viewers of Sesame Street at age 3 showed greater improvements in vocabulary by age 5 than did children who were less frequent viewers. These effects appeared even when parent education and other aspects of the child's environment were controlled (Huston, Wright, Rice, Kerkman, & St. Peters, 1990). A nationally representative sample of 10,000 households with children was surveyed by the Westat Corporation for the U. S. Department of Education in 1994, that included a set of questions on Sesame Street viewing. The descriptive results were parallel to ours though the sample was larger and the analysis much less detailed (Zill, Davies, & Daly, 1994).

When the present study was designed in 1989 there had been no summative evaluation of Sesame Street since its second year of broadcasting. Because the program was so widely viewed, it was no longer possible to assign an unexposed group of children to differing experimental treatments and still make them otherwise comparable. There could be no comparable, but "untreated" control group. The specific instructional goals of the program had also multiplied many times over by then, and the instructional agenda comprised a major document. A considerable body of research had accumulated, but little of it was summative in a broad sense.

Instead, by means of repeated and intensive parent interviews, laboratory and home observations, and individual child testing, we sought to study a smaller sample of children, drawn from lower-income, urban communities. Following them over more than three years, we prepared to carry out extensive analyses of some of the effects of early experiences, especially those of media use, on children's subsequent cognitive development, school readiness, and later adjustment in grade school.

The method chosen for this study, a longitudinal study beginning early in life and continuing until at least some of the important educational outcomes could be directly measured, assesses television viewing as it occurs naturally in a child's life, thereby avoiding the problems created by "encouragement to view." The major weakness of this kind of research design is that many other facets of the child's preferences, home environment, and family life may be correlated with viewing and also independently predict some of the outcome measures. Thus it could be the case that these "other

variables", and not viewing, cause the outcome, as well as influencing the choice of viewing. Hence it is critical with this method to measure as many of those factors as possible so that the unique effects of viewing can be isolated. Initial levels of individual cognitive skills had to be equated statistically to insure a level playing field at the start of the study. The decision to control other factors that are strongly associated both with viewing and with the outcome measures made it harder to predict outcomes at a later time that result from viewing at an earlier time, but enhanced the likelihood that TV viewing was playing a causal role whenever consistent patterns of results were obtained.

### Goals of the Study

The major questions addressed by the present study were of three kinds:

- 1) How do children's patterns of time and media use change with age? Are there clusters of program types that are heavily viewed by different groups of children?
- 2) Are there trade-offs or mutual displacements between the time spent watching television and other developmentally important activities, such as reading, educational activities, and video games? Are those trade-offs different for educational television than they are for other types of television programming?
- 3) Does viewing Sesame Street and other informative children's programming have long-term consequences for children's academic skills, school readiness, and school adjustment?

### Overview of the Report

This report is the first public dissemination of the results of "The Early Window Project", for which data were collected between 1989 and 1993. There will be additional reports in this series as more in-depth analyses are completed. There was no attempt by CTW to influence the design and conduct of the study, and there was a clear understanding, faithfully adhered to by both parties, that this was not to be proprietary research for Sesame Street or CTW. But there were practical, sentimental, academic, political, and personal reasons to complete the first report after a quarter-century of broadcasting of Sesame Street. Accordingly we are pleased that this first report can take as its "bottom line" the cumulative effects of viewing positive, educational, and informative children's programming, while contrasting those positive effects with the negative effects among the same children of viewing commercial entertainment-oriented programming.

The present report first describes the sample of families who participated, the design of the study, the instruments and procedures used, and the coding of independent and dependent variables for analysis.

The second section describes the amount and categories of television our target children watched as a function of age, and the concurrent relations among different categories of programs viewed. Because the sample is small, and selected to be representative only of low-income, urban families in one midwestern region, it is not useful for estimating audience statistics. The Westat study does that. (Zill, Davies, & Daly, 1994). It is useful, however, for understanding differences among children associated with age, developmental change, and family characteristics.

The third section describes the time-use data and how the different categories of interest are related to one another, and to concurrent television viewing. These categories include use of other media including print, and engagement in educational activities. The mutual trade-offs will help us understand the nature of displacement phenomena.

The final section asks whether viewing television in various categories and Sesame Street in particular appears to have a cumulative and causal relationship over time to the outcome variables, which include nationally standardized school-related skills like math, vocabulary, and reading; general school readiness; and school adjustment when they began elementary school.

## *METHOD*

### *The Sample*

The families participating in this study were drawn from census tracts in Kansas City, MO and Kansas City, KS and from Lawrence, KS where the median incomes were lowest. Each family had a child who was two or four years old at the beginning of the study. Families were recruited through community agencies, WIC programs, preschools and child care centers, posters in supermarkets and laundromats, radio announcements, local access cable TV channels, and word of mouth from other participants. We also recruited families from other neighborhoods who qualified for means-tested government assistance programs such as public housing.

In order to be included in the final analyses, a family had to have participated in at least two complete cycles of data collection. While a formal forward attrition analysis remains to be completed, extensive efforts were made to keep families in the study and to chase them down when they moved. A family was "lost" from the study only when a year of repeated efforts failed to locate them or schedule an office or a home visit. Lost families were replaced with newly recruited families having a child of the same age. "Lost" families were replaced only during the second and third years because the replacements, like the lost families, had to have at least two complete waves of data in order to be included in the analyses.

Table 1 describes the volunteer sample in various ways, as it changed across the four waves of data collection. There were nearly equal numbers of boys and girls among the targeted preschoolers. About 40% of the families were African Americans; about 40% were European Americans; and about 20% were Hispanic Americans. A small number of families represented native Americans and other ethnic groups. About 18% used Spanish as the primary language in the home.

Both mothers and fathers had on the average 13 years of education, which means high school plus additional training of about one year. On the Census Bureau's Socioeconomic Occupational Scale (zero to 100), both parents' current or most recent job averaged about 27, a skilled blue-collar level. A majority of the mothers had, or were seeking, a regular paid job outside the home.

The income / needs ratio is defined as the family's actual income divided by that income for a family of their composition located at the poverty threshold. The average income / needs ratio for this sample averaged about 1.73, except in the last year when more families were lost from the lower income half of the sample than from the higher income half. Another indicator is that about 46% of the families had received one or more forms of means-tested assistance within the past three years.

The target children were cared for at home by parents, or in a wide range of day care settings ranging from home child care to large organized preschools and Head Start programs with strong preacademic curricula.

Table 2 indicates the number of families who completed enough of the occasions for assessment to be included in the analyses for various combinations of the four waves of data. The data include replacement families. A formal forward analysis of attrition is in progress.

### Design of the Study

Figure 1 shows the design of the study. Families came annually to the project office on four occasions, and within a short time had a home visit from our staff, one for each office visit. These occasions are called "waves" of data, and although they were spread out over almost five years of data collection, for any one family the pattern was as shown.

The year elapsing between waves is called a "period", so that Period 1 is between Waves 1 and 2, and so on. There were thus three periods and the minimum participation included at least one whole period with a completed wave before and after it.

Table 1  
**Characteristics of the Sample**

<b>Attribute</b>	<b>Description</b>	<b>WAVE</b>			
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Gender:</b>	<b>Boys</b>	<b>118</b>	<b>132</b>	<b>114</b>	<b>107</b>
	<b>Girls</b>	<b>118</b>	<b>128</b>	<b>115</b>	<b>112</b>
<b>Ethnic Group:</b>	<b>African-American</b>	<b>91</b>	<b>107</b>	<b>75</b>	<b>73</b>
	<b>Hispanic-American</b>	<b>40</b>	<b>44</b>	<b>43</b>	<b>40</b>
	<b>European-American</b>	<b>96</b>	<b>100</b>	<b>94</b>	<b>90</b>
	<b>Native American</b>	<b>4</b>	<b>6</b>	<b>10</b>	<b>10</b>
	<b>Other</b>	<b>5</b>	<b>3</b>	<b>7</b>	<b>6</b>
<b>Primary Language</b>	<b>English</b>	<b>199</b>	<b>219</b>	<b>192</b>	<b>184</b>
	<b>Spanish</b>	<b>37</b>	<b>41</b>	<b>37</b>	<b>35</b>
<b>Demography:</b>	<b>Mom - years of educ.</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>
	<b>Dad - years of educ.</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>
	<b>Income / need ratio</b>	<b>1.7</b>	<b>1.7</b>	<b>1.8</b>	<b>1.9</b>
	<b>Mom - occup. status</b>	<b>26</b>	<b>28</b>	<b>29</b>	<b>29</b>
	<b>Dad - occup. status</b>	<b>25</b>	<b>28</b>	<b>29</b>	<b>28</b>
	<b>Family received means-tested assistance in past 3 years</b>	<b>48%</b>	<b>44%</b>	<b>46%</b>	<b>46%</b>

Table 2. Sample Sizes for Different Combinations of Waves

	Total	Younger	Older
Wave 1	237	119	118
Wave 2	225	112	113
Wave 3	230	116	114
Wave 4	218	106	112
Waves 1 & 2	203	102	101
Waves 2 & 3	205	105	100
Waves 3 & 4	218	107	111
Waves 1 & 3	190	96	94
Waves 1 & 4	184	91	93
Waves 2 & 4	198	99	99
Waves 1, 2 & 3	184	95	89
Waves 2, 3 & 4	198	100	98
Waves 1, 2 & 4	177	89	88
Waves 1, 3 & 4	182	90	92
Waves 1, 2, 3 & 4	176	89	87



Figure 1. Design of the study

<b>Year</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>
<b><i>Cohort 1 Age</i></b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b><i>Cohort 2 Age</i></b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b><i>Office &amp; Home Visits</i></b>	<b>Wave 1</b>	<b>Wave 2</b>	<b>Wave 3</b>	<b>Wave 4</b>
<b><i>Bi-Monthly Time Use Phone Diaries</i></b>				